



Fertilizers Recommendation System For Disease Prediction

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FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

1.1 WHY DO FARMERS USE FERTILIZERS?

Soils naturally contain many nutrients like nitrogen, phosphorous, calcium, and potassium. These nutrients allow plants to grow. When soil nutrients are missing or in short supply, plants suffer from nutrient deficiency and stop growing. When the nutrient level is too low, the plant cannot function properly and produce the food necessary to feed the worlds' population. Once crops are harvested for human consumption, the natural supply of nutrients in the soil must be “re-filled”. This is why farmers add nutrients to their soils. Nutrients can be added from a variety of sources—organic matter, chemical fertilizers, and even by some plants. This maintains the soil fertility, so the farmer can continue to grow nutritious crops and healthy crops.



1.2 PROBLEM STATEMENT

As agriculture struggles to support the rapidly growing global population, plant disease reduces the production and quality of food, fibre and biofuel crops. Losses may be catastrophic or chronic, but on average account for 42% of the production of the six most important food crops. Crop losses tend to be greatest in tropical countries where environmental conditions are particularly favourable, incomes are low and knowledge and investments in crop health management are minimal. Disease losses can mean that communities become dependent on imported foods, often replacing a balanced diet with processed foods that create further health problems. This issue is focused on research aimed at improving food security by reducing crop losses, particularly for low-income farmers. Manuscripts are invited that describe research into improving food security by reducing yield losses. Such research may include plant pathology, agronomy, entomology, weed science, farm management, improving resilience to abiotic constraints, postharvest handling, food safety, improved market access, the role of biotechnology, technology transfer, extension, education, policy and any other related topics.



1.3 FERTILIZER RECOMMENDATION SYSTEM

In agricultural production, soil characteristics play a vital role in maintaining fertility by allowing crops to develop better through root nutrition with minimal energy inputs. Nitrogen (N), Phosphorus (P), and Potassium (K) are all important nutrients extensively utilized in crops to supply a sufficient level of nutrients and keep their production level high. However, the application is generally limited to specific crops because of the global variability in these essential nutrients. Stability in fertilizer application, growth, and root growth rate increases crop fertility and crop production. To predict the suitable nutrients for different crops and provide nutrients recommendations by analyzing the crop fertility and yield production, this paper proposes fertilizer recommendations. This crop model will help to increase yield by analysis of the seasonal fertility performance of the soil. The proposed method is also a useful tool to improve soil fertility performance by providing the nutrient recommendation of optimal conditions for crop development. Experimental results show that the proposed model can recommend optimizing patterns and increasing the yearly yield efficiently. The method can help identify the region to assess crop suitability under certain nutrients levels and give insight into nutrient suitability assessments concerning specific crops in a climate-changing world.